GEOLOGY OF INDIANA.* — This survey has evidently begun in earnest. The present volume informs us that it is instituted to make known the mineral resources of the State, but does not state the amounts appropriated; we hope, however, it is proportionate to the practical benefits already conferred by the Survey. The geology of the counties examined, Clay, Greene, Park, Fountain, Warren, Vermilion and Franklin, display rich fields of coal, and are full of practical details which seem to have already more than tenfold repaid the expenses incurred. From Greencastle to Terre Haute a section has been run along the railroad line and by means of two Artesian wells the strata sounded to a considerable depth. These have enabled the Survey to give a very interesting section showing the strata from the Silurian to the surface. The first one at Terre Haute penetrates first the glacial deposits and reaches to the depth of one thousand seven hundred and ninety-three feet, stopping in the subcarboniferous rocks; the second at Reelsville, begins where the subcarboniferous limestone comes to the surface farther east, and though bored only one thousand two hundred and forty feet, penetrated the Upper Silurian.

The present report is concluded with a catalogue of the Mammals and Birds of Franklin County.

The assistants engaged in the Survey are Professor F. Bradley, Dr. Rufus Haymond, and Dr. G. M. Levette. The two former contribute largely to this volume; the report of the first on Vermilion county being particularly full and complete. We hope that no short-sighted economy will cut this survey short as that of Iowa has been before it has thoroughly worked up the natural history of the State.

RUDOLPH'S ATLAS OF THE GEOGRAPHY OF PLANTS. — There is, as I understand, an "Atlas der Pflanzen geographie," by L. Rudolph, of which a second edition has been published in Berlin, and recommended for translation into English, and introduction into our high schools. I possess the first edition, but I do not know whether the new one is as worthless as the first one is. If this is the case I do not understand how such a product of the utmost ignorance could be recommended, though the great Humboldt, to whom the work is dedicated, had already puffed it, probably without ever having looked at it. To prove my assertion I will point out the following errors in plate "North America" of the first edition. Between 34° and 45° north latitude in Oregon and California we find sixteen plants mentioned, of which not a single one grows there, *i. e.*, *Rudbeckia pinnata*, *Fraxinus Americana*, *Aristolochia sipho*, *Smilax sarsaparilla*, *Quercus tinctoria*, *Q. castanea*, *Ampelopsis bipinnata*, all eastern species; *Tagetes patula*, *Tagetes erecta*, *Lobelia splendens* and *fulgens*, *Georgina variabilis*, *Cobœa scandens*, *Convolvulus Mechoacana* (Mexican species), *Smilax officinalis* (Mexican when of Presl, South American when the plant

* First Annual Report of the Geological Survey of Indiana. By E. T. Cox, State Geologist. 8vo. pp, 240, with two maps and one section.

of Humboldt and Bonpland is meant) *Fraxinus heterophylla*, a European tree! The *Vanilla*, *Cacao* and *Quinoa* cultivated in the desert west of the Colorado! *Zinnia elegans*, *Georgina coccinea*, *Ipomea purga* are all placed too far northward. *Robinia viscosa* and *hispida* between the upper Missouri and Rocky Mountains, with *Gleditschia monosperma* and *G. triacanthos* in Northern Wisconsin; *Rosa suavis* and *Americana*, quite unknown species; *Pinus palustris* on McKenzie River!! *Pinus occidentalis* from West Indies, transplanted to the North American continent; *Juglans olivæformis*, our *Pecan* and *Castanea pumila* in the Rocky Mountains, and *Kalmia cuneata* on the Red River; *Aristolochia officinalis* (probably *Serpentaria*), *Bignonia capreolata* in Michigan; *Diospyros Lotus* an European tree; almonds and figs cultivated near Lake Ontario! And so on! Should all these errors be reproduced in the second edition, the introduction of the work into our schools will be a great nuisance. — F. BRENDEL.

NATURAL HISTORY MISCELLANY.

BOTANY.

DIALYSIS WITH STAMINODY IN KALMIA LATIFOLIA. — These two technical words we take from Dr. Masters' interesting volume published last year by the Ray Society, entitled "Vegetable Teratology," which last word denotes the science of monstrosities. *Dialysis* is the term applied to the separation of parts which are normally united; *staminody* is the conversion of other organs into stamens.

We have before us a novel and specially interesting monstrosity which is described by these terms. It was discovered by Miss Bryant, at South Deerfield in this state, and we are indebted to her, through a common friend, for the specimens before us. Among the shrubs of *Kalmia latifolia* which abound in a swamp belonging to Col. Bryant, a few have been noticed as producing, year after year, blossoms in singular contrast to the ordinary ones of this most ornamental shrub, and which, indeed, are more curious than beautiful. The corolla, instead of the saucer-shaped and barely 5-lobed cup, is divided completely into five narrowly linear or even thread-shaped petals. These are flat at the base, and scarcely if at all broader than the lobes of the calyx with which they alternate, but above by the revolution of the margins they become almost thread-shaped, and so resemble filaments. This resemblance to stamens goes further; for most of them are actually tipped with an imperfect anther; that is, the corolla is separated into its five component petals, and these transformed into stamens. Altered as they are in shape, yet a trace of the pouch is often discernible, in the form of a little boss on the outer or lower side, and a slight corresponding depression on the upper. The anther is ex-